effective when a willingness to pay (WTP) was $33,000/QALY or less and TIO + SFC was more cost-effective when a WTP exceeded that threshold. The cost-effectiveness was also sensitive to changes in several variables including the mortality rates and utilities associated with TIO + SAL and TIO + SFC, as well as the hospitalization rate associated with TIO + SAL. **CONCLUSION:** When monotherapy with TIO is not effective to control moderate to severe COPD, adding SFC rather than SAL appears to be a more reasonable approach from a cost-effectiveness standpoint in the US health care system. However, the results were sensitive to changes in several key variables.

PRS13

PEDIATRIC ASTHMA: AN EMPLOYER PERSPECTIVE ON ANNUAL EMPLOYEE AND DEPENDENT COSTS FOR MEDICAL CARE AND PRESCRIPTION DRUGS

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OBJECTIVE: Management of pediatric asthma is known to be very costly. However, little is known about the costs to the parent. We aimed to objectively assess employee and dependent costs for employees with children with asthma (EWCWA) compared with employees with children without asthma (EWCWOA). **METHODS:** A retrospective analysis was conducted using multiple US-based employers' data from 2001 to 2007. Data included medical claims, pharmacy claims, payroll, work absence, and demographics. Asthma diagnosis (ICD-9 codes 493.xx) or pharmacy claims for an asthma controller medication were used to identify employees with asthmatic dependents aged <12 years for the EWCWA cohort. Employees in the EWCWOA cohort were identified based on dependent age and lack of an asthma diagnosis (ICD-9 code) or pharmacy claim for a controller medication. The index date in the EWCWA cohort was defined as the date of first asthma diagnosis during 2001 or later; the first pediatric medical or pharmacy claim date was used in the EWCWOA cohort. All costs were adjusted to 2007 dollars and incremental costs (EWCWA—EWCWOA) were calculated using two-part regression models and presented for health care and prescriptions. Regression models controlled for demographics, job information, Charlson Co-morbidity Index, and geographic region. **RESULTS:** Data were available for the EWCWA (dependent age <4 yr: n = 4577; 4–7 yr: n = 4343; 8–11 yr: n = 3954; total <12 yr: n = 11,794) and EWCWOA (dependent age <4 yr: n = 32,558; 4–7 yr: n = 28,017; 8–11 yr: n = 27,863; total <12 yr: n = 64,812) cohorts. The incremental annual costs (EWCWA—EWCWOA) for employees and dependents (health care/prescriptions), respectively, were: dependent age <4 years: -$56/$73† and $663†/$568†; 4–7 years: $199*/$109† and $904†/$555†; 8–11 years: $364*/$116† and $1081†/$586†; <12 years: $154†/$95 and $862/$534 ($^{*}P < 0.05$, $^{\dagger}P < 0.01$). **CONCLUSION:** Pediatric asthma results in significant additional costs for both employees and dependents.

PRS14

BENEFITS FROM IMPROVED ASTHMA CARE IN FINLAND 1987–2005 ASSESSED WITH ANALYSIS OF COMPREHENSIVE SOCIETAL COST AND BEHAVIOUR OF COST DRIVERS

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OBJECTIVE: The prevalence of chronic asthma has tripled during last two decades in Finland, but overall costs of disease management have not increased and patient level costs have decreased significantly. We analyzed with comprehensive time series all expenditures as well as the effectiveness of interventions such as the national action program (1994–2004) and development of pharmacotherapy. **METHODS:** Finnish registry based data from 1987 to 2005 was combined to evaluate all costs of asthma. These included comprehensive health care costs, sick-leave compensations, disability pensions, and loss of productivity; all converted to 2004 euros. Several scenarios were constructed to identify the important changes in care processes and cost drivers during this period. **RESULTS:** The number of patients with valid special reimbursement for asthma medication increased significantly (83,000 to 216,000) during the observation period yet the overall expenditure of care remained at the level of 1987, at €240 million. Cost of medications doubled during study period, but savings were achieved as other expenditures, mainly hospitalizations, and loss of productivity decreased by 50 to 75%. Treatment effectiveness increased as asthma related deaths, disability pensions, sick-leave payments and institutional care decreased significantly (50 to 70%). The cost-saving scenarios showed that a significant part (40%) of positive effects was attained by launch of new asthma drugs and asthma pipes from 1989 to 1994. The initiation of the national care programme with its focus on anti-inflammatory treatment from disease onset, improved diagnostics and more active self care further increased this positive trend. **CONCLUSION:** Comprehensive assessment of large patient cohorts and long term economical outcomes is a useful method for evaluation of outcomes in chronic diseases. Identification of different cost drivers is needed as the cost of new interventions is increasing and their benefits should ideally be assessed in relation to their broader societal influence.

PRS15

THE BURDEN OF NASAL CONGESTION IN THE UNITED STATES

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OBJECTIVE: The prevalence and costs of allergic rhinitis (AR) in the United States are estimated to be very high. Recently, research has reported that not all AR symptoms are of equal importance to patients. In particular, evidence is mounting that nasal congestion is the most bothersome symptom of AR and thus may account for most of the burden of illness. However, unlike AR which has an ICD-9-CM code thus facilitating estimates of burden of illness, the cost of nasal congestion must be obtained indirectly. The purpose of the present analysis is to estimate the national costs of AR that are attributable to nasal congestion. **METHODS:** Data come from a recent national study of the effect of AR symptoms on patients' lives (e.g., sleep, daytime somnolence, mood, and work and school productivity). These relative effects of nasal congestion were then applied to U.S. cost estimates derived from the literature and a national employer claims database to estimate some of the economic burden of AR that could be attributed to nasal congestion. **RESULTS:** Results suggest that almost three-fourths of the cost associated with burden of illness related to AR is attributable to nasal congestion. Thus, approximately $3.4 billion of the $4.8 billion in direct costs for AR and approximately $3.1 billion of the $4.3 billion in indirect costs for AR can be attributed to nasal congestion. **CONCLUSION:** The direct and indirect costs attrib-